

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 02 DEC 2005



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Applicant's or agent's file reference DST 92	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/KR2004/003100	International filing date(<i>day/month/year</i>) 27 NOVEMBER 2004 (27.11.2004)	Priority date (<i>day/month/year</i>) 28 NOVEMBER 2003 (28.11.2003)	
International Patent Classification (IPC) or national classification and IPC IPC7 B65D 51/28			
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1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 8 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (*sent to the International Bureau only*) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:
 - ☒ Box No. I Basis of the report
 - ☐ Box No. II Priority
 - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Box No. IV Lack of unity of invention
 - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Box No. VI Certain documents cited
 - ☐ Box No. VII Certain defects in the international application
 - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 12 AUGUST 2005 (12.08.2005)	Date of completion of this report 31 OCTOBER 2005 (31.10.2005)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer CHOI, Ki Hyuk Telephone No. 82-42-481-5894 

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International application No.

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☒ This report is based on translations from the original language into the following language English, which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3 and 23.1(b))
 - ☒ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
 - ☐ the international application as originally filed/furnished
 - ☒ the description:
 - pages 1 - 14, 16, 18 - 56 as originally filed/furnished
 - pages* 15, 17 received by this Authority on 12/08/2005
 - pages* _____ received by this Authority on _____
 - ☒ the claims:
 - pages 57 - 72 as originally filed/furnished
 - pages* _____ as amended (together with any statement) under Article 19
 - pages* 73 - 74-4 received by this Authority on 12/08/2005
 - pages* _____ received by this Authority on _____
 - ☐ the drawings:
 - pages _____ as originally filed/furnished
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____
 - ☐ the sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☒ the claims, Nos. 66 - 69
 - ☐ the drawings, sheets _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	2 - 18, 20 - 65 , 70 - 81	YES
	Claims	1, 19	NO
Inventive step (IS)	Claims	2 - 8, 10 - 18, 20 - 65 , 70 - 81	YES
	Claims	9	NO
Industrial applicability (IA)	Claims	1 - 65 , 70 - 81	YES
	Claims	None	NO

2. Citations and explanations (Rule 70.7)

The following documents identified in the International Search Report have been considered for the purpose of this report:

D1: US 4,591,050 A

D2: US 4,793,475 A

D3: US 6,045,254 A

D4: JP 04-109030 U

1. Novelty

The invention of claim 1 is a bottle comprising a bottle body, an additive storage container provided with an insertion and an exposed part, an opening unit, and separation means for removing the additive storage container from the mouth of the bottle body.

The invention of claim 19 is a bottle comprising a bottle body, an additive storage container having a cylindrical additive storage part and a discharge port, and an opening unit having an end plate, a main cap, and a slider.

D1 discloses a package equivalent to the bottle body of claims 1 and 19, a cup equivalent to the additive storage container of claims 1 and 19, a cap (4) equivalent to the opening unit of claims 1 and 19, and a bridge (21) equivalent to the separation means of claim 1.

Said cup (2) of D1 comprises a lower portion (2"), an upper portion (2'), and a rim (5). The lower portion and the upper portion are equivalent to the insertion of claim 1, and the rim (5) is equivalent to the exposed part of claim 1. Said cup (2) of D1 also has a cylindrical shape and a discharging portion when the bridge (21) is cut. The cylindrical shape and the discharging portion are respectively equivalent to the cylindrical additive storage part and the discharge port of claim 19. Said cap (4) of D1 comprises a screw cap cover (10) equivalent to the end plate and the main cap of claim 19, and a collar (9) equivalent to the slider of claim 19.

(Continued in Supplemental Box.)

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Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:

BOX V.

Therefore, all the technical features of claims 1 and 19 are disclosed in D1, and claims 1 and 19 do not satisfy the requirement of PCT Article 33(2) in respect of novelty.

D1 discloses a bridge equivalent to the separation means of claims 1 to 9, 32 to 49 and 70 to 81 of the present application, and a cap having a collar equivalent to the slider of claims 14 to 45, and 50 to 65.

D2 discloses a partition wall (22) equivalent to the valve body of claims 3 to 8, 12 and 13.

D3 also discloses a valve part (14) equivalent to the valve body of claims 3 to 8, 12 and 13.

D4 discloses a rotation block (6) equivalent to the ratchet of claims 40 to 45.

However, the elevating protrusion of claims 2 to 8, the mouth of the bottle body of claim 9 formed in a double injection molding process, the ring-type stopper and the hook of claims 10 and 11, the locking groove of claims 13 and 14, the partition wall of claims 14 to 18, the outside protrusion and outside hooking protrusion of claims 20 to 31, the cutting protrusion of claims 32 to 49, the hook protrusion of claims 50 to 58, the bursting film of claims 59 to 65 and 70 to 72, and the plug of claims 73 to 81 are disclosed in neither D1 nor D2.

Therefore, claims 2 to 18, 20 to 65 and 70 to 81 satisfy the requirement of PCT Article 33(2) in respect of novelty.

2. Inventive Step

Claim 9 defines the bottle body of claim 1 having a mouth of the bottle body formed in a double injection molding process, but the double injection molding process is a wellknown process for making a bottle and obvious to the person skilled in the art.

Therefore, claim 9 does not satisfy the requirement of PCT Article 33(3) in respect of inventive step.

However, the technical features of claims 2 to 8, 10 to 18, 20 to 65, and 70 to 81 are not obvious to the person skilled in the art and cannot be readily achieved from any of the prior art D1 to D4.

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Supplemental Box

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previous page.

However, the technical features of claims 2 to 8, 10 to 18, 20 to 65 and 70 to 81 are not obvious to the person skilled in the art and cannot be readily achieved from any of the prior art D1 to D4.

Therefore, claims 2 to 8, 10 to 18, 20 to 65 and 70 to 81 satisfy the requirement of PCT Article 33(3) in respect of inventive step.

3. Industrial Applicability

The inventions of claims 1 to 65 and 70 to 81 relate to a bottle capable of containing two kinds of materials and easily mixing them at an exact mixture ratio. Therefore, claims 1 to 65 and 70 to 81 possess industrial applicability according to PCT Article 33(4).

FIGS. 7A and 7B are sectional views showing the construction and operation of the 5th embodiment of the present invention;

FIG. 8 is a sectional view showing the construction of the 6th embodiment of the present invention;

5 FIG. 9 is a plan view showing the structure of ratchets used for restriction of rotation of the opening unit relative to the additive storage container of the 6th embodiment of the present invention;

10 FIGS. 10A and 10B are enlarged sectional views showing a seal structure of the additive storage container and the mouth of a bottle body according to the 6th embodiment of the present invention;

FIGS. 11A and 11B are sectional views showing the operation of the 6th embodiment of the present invention;

FIG. 12 is a sectional view showing the assembled construction of the 7th embodiment of the present invention;

15 FIG. 13 is a sectional view showing the assembled construction of the 8th embodiment of the present invention;

FIG. 14 is a sectional view showing the assembled construction of the 9th embodiment of the present invention;

20 FIG. 15 is a perspective view showing an opened state of an upper cap of the 9th embodiment of the present invention;

FIG. 16 is a sectional view showing the assembled construction of the 10th embodiment of the present invention;

FIG. 17 is a sectional view showing the assembled construction of the 11th embodiment of the present invention;

25 FIG. 18A through 18C are sectional views showing the operation of the 11th embodiment of the present invention;

FIG. 19 is a sectional view showing the assembled construction of the 12th embodiment of the present invention;

30 FIG. 20 is an enlarged sectional view showing the construction of an important part of the 12th embodiment of the present invention;

FIG. 21 is a sectional view showing the assembled construction of the 13th embodiment of the present invention;

FIG. 38 is a sectional view showing the construction of the 19th embodiment of the present invention;

FIGS. 39A through 39C are sectional views showing the operation of the 19th embodiment of the present invention;

5 FIG. 40 is a sectional view showing the construction of the 20th embodiment of the present invention;

FIG. 41 is a perspective view showing the assembled construction of the 20th embodiment of the present invention;

10 FIGS. 42A and 42B are sectional views showing the operation of the 20th embodiment of the present invention;

FIG. 43 is an exploded perspective view showing the construction of the 21st embodiment of the present invention;

FIG. 44 is a sectional view showing the construction of the 21st embodiment of the present invention;

15 FIGS. 45A and 45B are sectional views showing the operation of the 21st embodiment of the present invention;

FIGS. 46A and 46B are sectional views showing the construction and operation of the 22nd embodiment of the present invention;

20 FIGS. 47A and 47B are sectional views showing the construction and operation of the 23rd embodiment of the present invention;

FIG. 48 is a sectional view showing the construction of the 24th embodiment of the present invention;

FIG. 49 is a side view showing the appearance of an additive storage container of the 24th embodiment of the present invention;

25 FIGS. 50A and 50B are sectional views showing the operation of the 24th embodiment of the present invention;

FIG. 51 is a sectional view showing the construction of the 25th embodiment of the present invention;

30 FIG. 52 is a side view showing the appearance of an additive storage container of the 25th embodiment of the present invention; and

FIGS. 53A and 53B are views showing the operation of the 25th embodiment of the present invention.

【Best Mode】

additive storage container corresponding to the upper end surface of the mouth is provided with an upper ratchet, so that the additive storage container is allowed to rotate in one direction relative to the mouth.

【Claim 62】

5 The bottle according to claim 61, wherein an upper part of the additive storage container is provided with a lower ratchet piece, and a lower surface of the opening unit corresponding to the upper part of the additive storage container is provided with an upper ratchet piece that is allowed to rotate in one direction relative to the lower ratchet piece, so
10 that rotational force of the opening unit is transmitted to the additive storage container.

【Claim 63】

15 The bottle according to claim 62, wherein ring-shaped seal protrusions are provided around an outer circumferential surface of the slider at positions above and below the discharge port.

【Claim 64】

20 The bottle according to any one of claims 59 through 63, wherein the slider is provided therein with a partition wall that divides an additive storage space into two parts, with a discharge port and an open port formed on the two divided parts of the additive storage space.

【Claim 65】

 The bottle according to claim 64, wherein the finish plate is provided with at least one open port to supply the interior of the additive storage space with additive.

25 **【Claim 66】 (Canceled)**

deleted

【Claim 67】 (Canceled)

【Claim 68】 (Canceled)

【Claim 69】 (Canceled)

【Claim 70】 (Added)

5 A bottle, comprising:

a bottle body having a mouth with an external thread formed around an outer circumferential surface of the mouth;

10 an additive storage container having an end plate being in surface contact with an open end of the mouth, an inner cap extending downward in an axial direction from an inner circumferential edge of the end plate and movably inserted into the mouth in an axial direction, and an external thread that protrudes outward from an outer circumferential edge of the end plate in a radial direction to be continuous with the external thread of the mouth;

15 a bursting film which seals a lower end of the additive storage container;

20 an opening unit comprising a finish plate provided on an upper part of the inner cap, an upper cap extending downward in an axial direction from an outer circumferential edge of the finish plate and having an internal thread engaging with the external threads of both the mouth and the end plate at the same time, and a slider extending in an axial direction from the finish plate and movably inserted into the inner cap in an axial direction, with a cutting edge provided on a lower end of the slider so as to tear off the bursting film at a predetermined position.

25

【Claim 71】 (Added)

The bottle according to claim 70, wherein the cutting edge comprises a support shaft, with at least one reinforcing rib provided around the support shaft of the cutting edge to increase the strength of

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【Claim 72】 (Added)

The bottle according to claim 71, wherein the bursting film is selected from a thin aluminum film or a thin film which is produced through a molding process from the same material as is the inner cap, with
5 a tear-off line provided on the thin film.

【Claim 73】 (Added)

A bottle, comprising:

a bottle body having a mouth with an external thread formed around
an outer circumferential surface of the mouth;

10 an additive storage container having an end plate being in surface contact with an open end of the mouth, a main cap extending in an axial direction from an outer circumferential edge of the end plate and having an internal thread engaging with the external thread of the mouth through a screw-type engagement, an inner cap extending in an axial direction from
15 an inner circumferential edge of the end plate and movably inserted into the mouth, with a plurality of discharge ports formed around a lower end of the inner cap, and an extension part extending upward from the inner circumferential edge of the end plate so that the extension part is opposite the inner cap, with an external thread formed around an outer
20 circumferential surface of the extension part;

a plug mounted to a lower end of the inner cap, thereby sealing an axial opening of the inner cap; and

an opening unit comprising a finish plate placed on an upper end of the extension part, an upper cap extending in an axial direction from
25 an outer circumferential edge of the finish plate and engaging with the external thread of the extension part, and a slider extending in an axial direction from an inner surface of the end plate and movably inserted into the inner cap, so that an end of the slider is sealed by the plug.

【Claim 74】 (Added)

30 The bottle according to claim 73, wherein the plug is provided at a lower end thereof with a stop ring that engages with a stop protrusion provided around a lower end of an inner surface of the inner cap so that axial movement of the plug relative to the slider is restricted.

【Claim 75】 (Added)

The bottle according to claim 74, wherein a seal ring is provided on an upper end of the plug so that the seal ring comes into contact with a lower end of the slider.

5 【Claim 76】 (Added)

The bottle according to claim 74, wherein a cylindrical seal ring is provided in a lower part of the interior of the slider so that the cylindrical seal ring comes into contact with an upper end of the plug.

10 【Claim 77】 (Added)

The bottle according to claim 76, wherein the cylindrical seal ring is integrated with the slider through a double injection molding process in which the cylindrical seal ring is inserted in a cavity of a mold when the slider is produced by injection molding.

15 【Claim 78】 (Added)

The bottle according to any one of claims 73 through 77, wherein the inner cap is provided with a step so that the inner cap is spaced apart from the inner circumferential surface of the mouth.

20 【Claim 79】 (Added)

The bottle according to claim 78, wherein the external thread of the extension part is formed as a thread having a direction opposite to that of the external thread of the mouth.

25 【Claim 80】 (Added)

The bottle according to claim 79, wherein the extension part is provided with a stopper which extends outward in a radial direction around the outer circumferential surface of the extension part and limits upward movement of the upper cap to a predetermined position.

【Claim 81】 (Added)

The bottle according to claim 80, wherein the extension part is provided with an interference protrusion that interferes with the upper cap, thus generating sound, while the upper cap is provided with a sound port to transmit the sound outside the bottle.